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EXAMINER

ALMEIDA, DEVIN E

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2432

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ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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DETAILED ACTION

This action is in response to the papers filed 5/11/2009.

Response Arguments

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Inada teaches wherein the first header includes an Internet Protocol destination address corresponding to the destination address in column 11 lines 43-52 i.e. set new IP header. Amara teaches including a sequence number in each packet to keep track of the order of each data packet in Figure 4 element 210 sequence number and column 8 lines 5-24. The combination clearly teaches "wherein the first header includes an Internet Protocol destination address corresponding to the destination address and said identifier".

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claims 1, 4, 7-10, 14, and 16-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Regan (U.S. 2004/0213232) in view of Inada et al (U.S. Patent # 6,775,769) in further view of Amara et al (U.S. Patent # 6,839,338). Regan teaches with respect to claim 1, a method for secure remote mirroring of network traffic, the method comprising:

receiving a data packet to be remotely mirrored by an entry device (see Regan abstract i.e. data packets, segments, frames, or other forms of encapsulation may be mirrored off of a core network (e.g., IP, TCP) to one or more mirroring destinations without using a parallel network)) pre-configured with a mirroring destination address to which to mirror the data packet (see Regan abstract and paragraph 0022 i.e. a forwarding engine 202 may be implemented as one or more modules used for both mirroring and forwarding packets from a router to a primary destination (i.e., a destination to which the packet is addressed) and a mirror destination (i.e., the place to which you want the mirror packets to be sent));

forwarding the data packet in unencrypted form towards an original destination address indicated in the data packet and a copy to a mirror destination (see Regan abstract and paragraph 0022-0026); and

forwarding the encapsulated packet to an exit device associated with the mirroring destination address (see paragraph 0023 i.e. a forwarding engine 202 may be implemented as one or more modules used for both mirroring and forwarding packets from a router to a primary destination (i.e., a destination to

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which the packet is addressed) and a mirror destination (i.e., the place to which you want the mirror packets to be sent)).

Regan does not teach encrypting a copy the data packet to form an encrypted packet; incrementing an identifier for indicating a position of the data packet within an order of packets received by an exit device; generating and adding a first header and a second header to the encrypted data packet to encapsulate the encrypted data packet, wherein the first header includes an Internet Protocol destination address corresponding to the destination address and said identifier, the second header includes a media access control (MAC) destination address, and the encapsulated encrypted packet comprises an IP-encapsulated encrypted packet including the IP destination address.

Regan teaches that the mirrored packet are encapsulated and sent via a transport tunnel (see paragraph 0025) but does not go into the way the packets are encapsulated.

Inada teaches encrypting a copy the data packet to form an encrypted packet (see column 11 lines 43-52 i.e. encrypts the whole received plaintext pack); generating and adding a first header and a second header to the encrypted data packet to encapsulate the encrypted data packet, wherein the first header includes an Internet Protocol destination address corresponding to the destination address and said identifier (see column 11 lines 43-52 i.e. set new IP header), the second header includes a media access control (MAC) destination address (see column 11 lines 43-52 i.e. then, the ciphertext MAC

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address resolution block 28 sets the MAC address of the MAC header based on the IP address of the IP header newly set), and the encapsulated encrypted packet comprises an IP-encapsulated encrypted packet including the IP destination address (see column 11 lines 43-52);

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains to have used the encapsulation as taught by Inada to encrypt and encapsulate the data packet to further increase the security of the data packet by not allowing other devices to intercept the IP packet and read its data portion (see Inada column 13 lines 39-57). Therefore one would have been motivated to have used the encapsulation as taught by Inada.

Amara teaches incrementing an identifier for indicating a position of the data packet within an order of packets received by an exit device (see Figure 4 element 210 sequence number and column 8 lines 5-24). It would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains to have a sequence number is used to keep track of each data packet. Therefore one would have been motivated to have a sequence number for each packet.

With respect to claim 4 determining the MAC destination address associated with the destination IP address; generating and adding as the second header a MAC header including the MAC destination address to the IP-encapsulated packet to form a MAC data frame, wherein the MAC header includes the MAC destination address in a destination field; and transmitting the

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MAC data frame to communicate the IP-encapsulated packet across a layer 2 domain (see column 11 lines 43-52 i.e. then, the ciphertext MAC address resolution block 28 sets the MAC address of the MAC header based on the IP address of the IP header newly set).

With respect to claim 7, further comprising: receiving the encapsulated encrypted packet by the exit device (see Amara column 8 line 66 – column 9 line 15 i.e. the destination device endpoint); removing the header to de-encapsulate the encrypted packet; and decrypting the encrypted packet to re-generate the data packet (see Amara column 8 line 66 – column 9 line 15 i.e. the destination device endpoint decrypts the original IP packet and forwards that packet to the destination device); and using said identifier to determine the position of the data packet within the order of packets received by the exit device (see Amara Figure 4 element 210 sequence number and column 8 lines 5-24).

With respect to claim 8, wherein the encrypting and decrypting is performed under a public-private key encryption scheme (see Amara column 10 lines 6-60).

With respect to claim 9, wherein the encrypting is performed using a public key of a destination device, and wherein the decrypting is performed using a corresponding private key of the destination device (see Amara column 10 lines 6-60).

With respect to claim 10, configuring the entry device in a best effort mirroring mode to reduce head-of-line blocking (see Amara abstract and column 8 line 66 – column 9 line 15).

With respect to claim 11, configuring the entry device in a lossless mirroring mode to assure completeness of mirrored traffic (see Amara abstract and column 8 line 66 – column 9 line 15).

With respect to claim 14, a networking device comprising:
a plurality of ports for receiving and transmitting packets therefrom, wherein the packets are transmitted based on original destination address indicated therein (see Regan abstract and paragraph 0022 i.e. a forwarding engine 202 may be implemented as one or more modules used for both mirroring and forwarding packets from a router to a primary destination (i.e., a destination to which the packet is addressed) and a mirror destination (i.e., the place to which you want the mirror packets to be sent));

a secure remote mirroring engine configured to detect packets from a specified mirror source, and to forward the encapsulated encrypted packets to a pre-configured destination address corresponding to the IP destination address by way of at least one of the ports (see Regan abstract and paragraph 0022 i.e. a forwarding engine 202 may be implemented as one or more modules used for both mirroring and forwarding packets from a router to a primary destination (i.e., a destination to which the packet is addressed) and a mirror destination (i.e., the place to which you want the mirror packets to be sent)).

Regan does not teach to use an incrementing identifier to indicating an order of the detected packets, to encrypt the detected packets, to encapsulate each of the encrypted packets by adding to the encrypted packet a first header which includes said identifier and an internet Protocol destination address and by

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also adding a second header which includes a media access control destination address, and an encryption module configured to be utilized by the remote mirroring engine during encryption of the detected packets.

Regan teaches that the mirrored packet are encapsulated and sent via a transport tunnel (see paragraph 0025) but does not go into the way the packets are encapsulated.

Inada teaches to encrypt the detected packets (see column 11 lines 43-52 i.e. encrypts the whole received plaintext pack), to encapsulate each of the encrypted packets by adding to the encrypted packet a first header which includes said identifier and an internet Protocol destination address (see column 11 lines 43-52 i.e. set new IP header) and by also adding a second header which includes a media access control destination address address (see column 11 lines 43-52 i.e. then, the ciphertext MAC address resolution block 28 sets the MAC address of the MAC header based on the IP address of the IP header newly set).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains to have used the encapsulation as taught by Inada to encrypt and encapsulate the data packet to further increase the security of the data packet by not allowing other devices to intercept the IP packet and read its data portion (see Inada column 13 lines 39-57). Therefore one would have been motivated to have used the encapsulation as taught by Inada.

Amara teaches incrementing an identifier for indicating a position of the data packet within an order of packets received by an exit device (see Figure 4 element 210 sequence number and column 8 lines 5-24). It would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains to have a sequence number is used to keep track of each data packet. Therefore one would have been motivated to have a sequence number for each packet.

With respect to claim 16, The networking device of claim 15, wherein the remote mirroring engine encrypts the copies of the detected packets using a public key of a public-private key pair (see Amara column 10 lines 6-60).

With respect to claim 17, a system for secure remote mirroring of network traffic, the system comprising: a mirror entry device including a secure mirroring engine configured to detect packets from a specified mirror source, and to forward the encapsulated encrypted packets to a pre-configured destination by way of at least one of the ports, wherein the pre-configured destination is distinct from original destination indicated in the detected packets, and wherein the detected packets are forwarding in unencrypted form towards an original destination address indicated in the data packet (see Regan abstract and paragraph 0022 i.e. a forwarding engine 202 may be implemented as one or more modules used for both mirroring and forwarding packets from a router to a primary destination (i.e., a destination to which the packet is addressed) and a mirror destination (i.e., the place to which you want the mirror packets to be

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sent)); and a mirror exit device including a secure mirroring receiver configured to detect and decapsulate the encapsulated encrypted packets from the mirror entry device and to decrypt the encrypted packets (see Regan abstract and paragraph 0022 i.e. a forwarding engine 202 may be implemented as one or more modules used for both mirroring and forwarding packets from a router to a primary destination (i.e., a destination to which the packet is addressed) and a mirror destination (i.e., the place to which you want the mirror packets to be sent)).

Regan does not teach to use an incrementing identifier to indicating an order of the detected packets, to encrypt the detected packets, to encapsulate each of the encrypted packets by adding to the encrypted packet a first header which includes said identifier and an internet Protocol destination address and by also adding a second header which includes a media access control destination address, and an encryption module configured to be utilized by the remote mirroring engine during encryption of the detected packets.

Regan teaches that the mirrored packet are encapsulated and sent via a transport tunnel (see paragraph 0025) but does not go into the way the packets are encapsulated.

Inada teaches to encrypt the detected packets (see column 11 lines 43-52 i.e. encrypts the whole received plaintext pack), to encapsulate each of the encrypted packets by adding to the encrypted packet a first header which includes said identifier and an internet Protocol destination address (see column 11 lines 43-52 i.e. set new IP header) and by also adding a second header which includes a media access control destination address address (see column 11

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lines 43-52 i.e. then, the ciphertext MAC address resolution block 28 sets the MAC address of the MAC header based on the IP address of the IP header newly set).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains to have used the encapsulation as taught by Inada to encrypt and encapsulate the data packet to further increase the security of the data packet by not allowing other devices to intercept the IP packet and read its data portion (see Inada column 13 lines 39-57). Therefore one would have been motivated to have used the encapsulation as taught by Inada.

Amara teaches incrementing an identifier for indicating a position of the data packet within an order of packets received by an exit device (see Figure 4 element 210 sequence number and column 8 lines 5-24). It would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains to have a sequence number is used to keep track of each data packet. Therefore one would have been motivated to have a sequence number for each packet.

With respect to claim 18, wherein the encrypting and decrypting is performed under a public-private key encryption scheme (see Amara column 10 lines 6-60).

With respect to claim 19, wherein the encrypting is performed using a public key of a destination device, and wherein the decrypting is performed using

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a corresponding private key of the destination device (see c Amara column 10 lines 6-60).

With respect to claim 20, a system for secure remote mirroring of network traffic, the system comprising a mirror entry device and a pre-configured destination address associated with a mirror exit device; wherein the pre-configured destination is distinct from original destination indicated in the detected packets, wherein the detected packets are forwarding in unencrypted form towards an original destination address indicated in the data packet (see Regan abstract and paragraph 0022 i.e. a forwarding engine 202 may be implemented as one or more modules used for both mirroring and forwarding packets from a router to a primary destination (i.e., a destination to which the packet is addressed) and a mirror destination (i.e., the place to which you want the mirror packets to be sent)).

Regan does not teach to use an incrementing identifier to indicating an order of the detected packets, to encrypt the detected packets, to encapsulate each of the encrypted packets by adding to the encrypted packet a first header which includes said identifier and an internet Protocol destination address and by also adding a second header which includes a media access control destination address, and an encryption module configured to be utilized by the remote mirroring engine during encryption of the detected packets.

Regan teaches that the mirrored packet are encapsulated and sent via a transport tunnel (see paragraph 0025) but does not go into the way the packets are encapsulated.

Inada teaches to encrypt the detected packets (see column 11 lines 43-52 i.e. encrypts the whole received plaintext pack), to encapsulate each of the encrypted packets by adding to the encrypted packet a first header which includes said identifier and an internet Protocol destination address (see column 11 lines 43-52 i.e. set new IP header) and by also adding a second header which includes a media access control destination address address (see column 11 lines 43-52 i.e. then, the ciphertext MAC address resolution block 28 sets the MAC address of the MAC header based on the IP address of the IP header newly set).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains to have used the encapsulation as taught by Inada to encrypt and encapsulate the data packet to further increase the security of the data packet by not allowing other devices to intercept the IP packet and read its data portion (see Inada column 13 lines 39-57). Therefore one would have been motivated to have used the encapsulation as taught by Inada.

Amara teaches incrementing an identifier for indicating a position of the data packet within an order of packets received by an exit device (see Figure 4 element 210 sequence number and column 8 lines 5-24). It would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains to have a sequence number is used to keep track of each data packet. Therefore one would have been motivated to have a sequence number for each packet.

With respect to claim 21, A method for secure remote mirroring of network traffic, the method comprising:

remotely configuring an entry device with an destination address (see Regan abstract i.e. data packets, segments, frames, or other forms of encapsulation may be mirrored off of a core network (e.g., IP, TCP);

receiving a data packet to be mirrored by the entry device (see Regan abstract i.e. data packets, segments, frames, or other forms of encapsulation may be mirrored off of a core network (e.g., IP, TCP);

forwarding the data packet in unencrypted form towards an original destination address indicated in the data packet and forwarding the encapsulated encrypted packet to the exit device (see Regan abstract and paragraph 0022 i.e. a forwarding engine 202 may be implemented as one or more modules used for both mirroring and forwarding packets from a router to a primary destination (i.e., a destination to which the packet is addressed) and a mirror destination (i.e., the place to which you want the mirror packets to be sent)).

Regan does not teach remotely configuring an exit device at the destination address with a decryption key; incrementing an identifier to indicate a position of the data packets within an order of packets mirrored by the entry device; encrypting a copy of the data packet using the encryption key to form an encrypted packet; generating and adding a header to encapsulate the encrypted data packet, wherein the header includes the mirroring destination address.

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Regan teaches that the mirrored packet are encapsulated and sent via a transport tunnel (see paragraph 0025) but does not go into the way the packets are encapsulated.

Inada teaches to encrypt the detected packets (see column 11 lines 43-52 i.e. encrypts the whole received plaintext pack), to encapsulate each of the encrypted packets by adding to the encrypted packet a first header which includes said identifier and an internet Protocol destination address (see column 11 lines 43-52 i.e. set new IP header) and by also adding a second header which includes a media access control destination address address (see column 11 lines 43-52 i.e. then, the ciphertext MAC address resolution block 28 sets the MAC address of the MAC header based on the IP address of the IP header newly set).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains to have used the encapsulation as taught by Inada to encrypt and encapsulate the data packet to further increase the security of the data packet by not allowing other devices to intercept the IP packet and read its data portion (see Inada column 13 lines 39-57). Therefore one would have been motivated to have used the encapsulation as taught by Inada.

Amara teaches remotely configuring an exit device at the destination address with a decryption key (see column 8 line 66 – column 9 line 15 i.e. the source device endpoint encrypts the IP packet); incrementing an identifier to indicate a position of the data packets within an order of packets mirrored by the

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entry device (see Figure 4 element 210 sequence number and column 8 lines 5-24);

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains to have used the encapsulation as taught by Amara to encrypt and encapsulate the data packet to further increase the security of the data packet. Therefore one would have been motivated to have used the encapsulation as taught by Amara.

With respect to claim 22, wherein the remote configuration is performed by way of SNMP (see Amara column 3 line 14 – column 4 line 17 SNMP is included in TCP/IP).

With respect to claim 23, wherein the remote configuration is performed by way of a secure remote protocol (see Amara column 3 line 14 – column 4 line 17).

Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Regan (U.S. 2004/0213232) in view of Inada et al (U.S. Patent # 6,775,769) in view of Kojima et al (5,280,476). Regan and Inada do not teach with respect to claim 5, wherein determining the MAC address comprises: determining if a mapping of the IP destination address to the MAC destination address is stored in an address resolution protocol (ARP) cache; if so, then retrieving the MAC destination address from the ARP cache; and if not, then broadcasting an ARP request with the IP destination address and receiving an ARP reply with the MAC destination address.

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Kojima teaches wherein determining the MAC address comprises: determining if a mapping of the IP destination address to the MAC destination address is stored in an address resolution protocol (ARP) cache (see Kojima column 5 lines 17-35); if so, then retrieving the MAC destination address from the ARP cache (see Kojima column 5 lines 19-20); and if not, then broadcasting an ARP request with the IP destination address and receiving an ARP reply with the MAC destination address (see Kojima column 5 lines 17-35). It would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains to have added a MAC address to the data get to help the data get delivered to its destination across the LAN (see Kojima column 5 lines 17-35). Therefore one would have been motivated to have add a MAC address.

With respect to claim 6, wherein the IP-encapsulated encrypted packet is communicated across multiple intermediate layer 2 domains (see Amara figure 1).

Claim 12, rejected under 35 U.S.C. 103(a) as being unpatentable over Regan (U.S. 2004/0213232) in view of Inada et al (U.S. Patent # 6,775,769) in view of Amara et al (U.S. Patent # 6,839,338) in view of Classon et al (U.S. Patent 6,700,867). Regan and Amara teaches everything with respect to claim 1 above but does not teach truncating the data packet to reduce a size of the data packet prior to encryption. Classon teaches truncating the data packet to reduce a size of the data packet prior to encryption (see column 20 lines 20-53). It would

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have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains to have truncated the data packet to satisfy memory (buffer) requirements (see column 20 lines 20-53). Therefore one would have been motivated to have truncated the data packet.

Claim 13, rejected under 35 U.S.C. 103(a) as being unpatentable over Regan (U.S. 2004/0213232) in view of Amara et al (U.S. Patent # 6,839,338) in view of Engwer (U.S. Patent 6,947,483). Regan and Amara teaches everything with respect to claim 1 above but does not teach compressing at least a portion of the data packet to reduce a size of the data packet prior to encryption. Engwer teaches compressing at least a portion of the data packet to reduce a size of the data packet prior to encryption (see column 1 line 52 – column 2 line 6). It would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains to have compressed the data packet. Data transmission between the various access points (APs) and their associated mobile units may involve large amounts of data which may take substantial amount of time and processing power to transmit over the air median. Such data transmissions are costly if the transmitted data is uncompressed.s (see column 1 line 52 – column 2 line 6). Therefore one would have been motivated to have compressed the data packet.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Devin Almeida whose telephone number is 571-270-1018. The examiner can normally be reached on Monday-Thursday from 7:30 A.M. to 5:00 P.M. The examiner can also be reached on alternate Fridays from 7:30 A.M. to 4:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gilberto Barron, can be reached on 571-272-3799. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

/Devin Almeida/
Examiner, Art Unit 2432

/Gilberto Barron Jr./
Supervisory Patent Examiner, Art Unit 2432